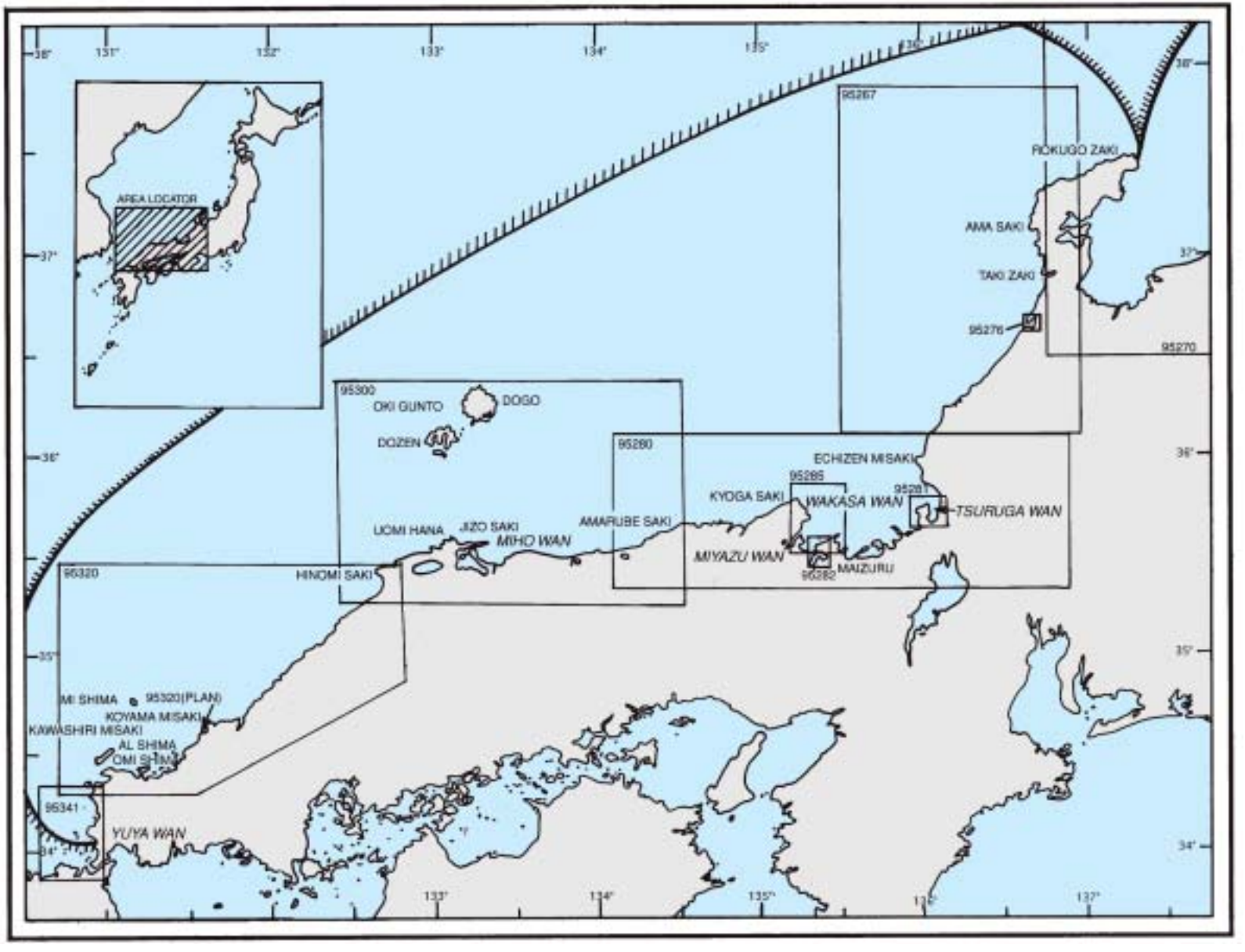
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95267
RIKUGO ZAKI
AMA SAKI
TAKO ZAKI
95276
95270
95300
OKI GUNTO
DOGO
DOZEN
95280
ECHIZEN MISAKI
95285
KYOGA SAKI
WAKASA WAN
95287
TSURUGA WAN
UOMI HANA
JIZO SAKI
AMARUBE SAKI
MIHO WAN
MIYAZU WAN
95282
MAIZURU
95320
HINOMI SAKI
MI SHIMA
95320(PLAN)
KOYAMA MISAKI
KAWASHIRI MISAKI
AL SHIMA
OMI SHIMA
95341
YUYA WAN
36°
37°
35°
34°
131°
132°
133°
134°
135°
136°
137°

Table of Contents

SECTOR 3

NORTHWEST COAST OF HONSHU—ROKUGO SAKI TO MURASAKI BANA (INCLUDING OFF-LYING ISLANDS)

Plan.—This sector describes the SW part of the NW coast of Honshu from Rokugo Saki to Murasaki Bana. The coast in this area extends in a SW direction for a distance of about 400 miles. It forms the S shore of the Japan Sea.

Oki Gunto and Take Shima, along with other off-lying islands, are also described in this sector.

General Remarks

3.1 Winds—Weather.—The highest development of the winter Northwest Monsoon for Japan's land area is on the NW coast, against much of which the wind strikes freely from the open Japan Sea to the N of Tsushima Kaikyo. South winds, nevertheless, may be expected. Only in a few of the bays like Toyama, sheltered by the Noto Hanto and in the Niigata region, where the island of Sado acts as a wind shield, is the coast particularly protected. In summer, SE to SW winds are mostly prevalent, but local conditions may cause much change.

On the part of the coast dominated by Tsushima Kaikyo, W winds are in the majority in December and January at Hamada, but thereafter, N to E winds are most common even in summer, due to local conditions in the strait where the lay of the channel and the land and sea breezes combine to back the Southeast Monsoon to the N and to the E. Nevertheless, SW winds occur in summer, though SE winds are very rare. The average annual wind speed is 7 knots, with means of 9 knots in December and January and 5 knots in June.

In the vicinity of Miho Wan, the winds are comparatively steady, sometimes blowing from one direction for two or three weeks at a time. Northwest winds are strongest and most frequent in winter, but cease in April. Light S winds prevail in summer, gradually changing to E in late August, then backing toward the N with the coming of bad weather in October.

At Tsuruga, N winds predominate in autumn and winter and S winds in spring and summer. East winds are noticeably absent. Winter gales in the bay, owing to the land configuration, are N or S.

At Mikuni, December to February is the period of strong NW winds and rough seas. North winds continue until June, but are interrupted by S to W winds in spring. Light S winds prevail in summer, with some squally weather.

South of the Nanto Hanto, at Kanazawa, while strong winds may be expected in winter, the mean December velocity is only 6 knots, the average for the year is 5 knots, and from July to September, 4 knots. On the E side of the peninsula, at Ogi, N and W winds are strong in winter, through the harbor, protected by the land, is seldom rough.

Tides—Currents.—The Tsushima Current flows in a NW direction off the NW coast of Honshu. In summer, after entering the Japan Sea, its general velocity is 0.5 to 1 knot. In winter, the current is weaker, through near the islands and headlands it may attain a velocity exceeding 1 knot, especially after NW gales.

The Tsushima Current often influences the weak tidal currents off the NW coast of Honshu. The resultant set may attain considerable strength in the direction of the ocean current, with one tidal current nearly obliterated and the other greatly augmented in both velocity and length of flow.

Tides in the Japan Sea are largely the effect of the indraft of the tidal wave which passes through Tsushima Kaikyo, the large strait at the W end of Honshu. On the NW coast of Honshu, the tides have an extremely pronounced diurnal inequality, and diurnal tides occur. The two successive low waters show the greatest difference in height. Lower low water follows higher high water. The springs rise is small, the mean varying to a maximum of 1.2m.

Off this coast the tidal currents are generally weak. Irregular sets may result from winds and other influences. Complications are also caused by the Tsushima Current, stated to be a branch of the warm Kuroshio Current, which flows along the coast in a NE direction. Though the Tsushima Current does not attain great strength, resultant sets of ocean and tidal currents may flow with considerable velocity, the augmented tidal current running nearly throughout the 12 hour period.

Rokugo Saki to Wa-Jima Ko

3.2 Rokugo Saki (37˚32'N., 137˚20'E.) is the NE point of Noto Hanto. A light is shown from a round white tower on the point. A rocky spit, with depths of less than 9.2m, extends NE from the point for about 0.5 mile.

From Rokugo Saki the coast trends WSW for a distance of 21.5 miles to Wa-jima Ko. The coast is fringed with reefs and shoals, extending as much as 0.5 mile offshore in places. Toro Guri, the outermost reef, has a depth of 2.7m and lies about 0.9 mile offshore, midway between Rokugo Saki and Kashima Zaki.

Kura Saki (37˚30'N., 137˚09'E.) is located about 8.5 miles WSW of Rokugo Saki. A light is shown from the point. Kuratoubo Dake, 366m high, lies 2 miles SE of the point.

Shira Saki, about 5 miles SW of Kura Saki, is faced with a red cliff. Iwakura Yama rises near the coast, about 2 miles further E, to an elevation of 356m; it has a red cliff on its N side and is a good landmark.

Koshu Zan (Takasu Yama) (37˚23'N., 136˚57'E.), located 6 miles SW of Shira Saki, attains an elevation of 567m, 1.25 miles inland. It is easy to identify as it is the highest mountain in the vicinity. Two green domes, showing lights, are situated on the summit.

Wa-jima Ko (37˚24'N., 136˚54'E.) (World Port Index No. 61825) is a small port situated on the E side of Tatsuga Saki, which has a remarkable white cliff on its seaward face. A light is shown near the summit of Tatsuga Saki.

Wa-jima Ko is the only sheltered port on the N shore of Noto Hanto. The port is protected by three breakwaters, from each head of which a light isshown. No. 1 Breakwater protects an outer basin. No. 2 Breakwater and No. 3 Breakwater enclose an

Table of Contents

inner basin. A spur projecting NE from No. 3 Breakwater protects a second inner basin. The harbor has charted depths of 0.6 to 4.6m.

Vessels in the 500 grt class can anchor in the harbor. Larger vessels should anchor E of the breakwater, in depths of 11.9m, sand. The harbor affords good shelter from winds blowing out of the S and W. Anchorage is difficult and dangerous with NW winds.

Caution.—Daija Guri is the general name for the several reefs lying within 0.4 mile NNE of Tatsuga Saki. The 20m curve is about 0.3 mile N of Daija Guri. In bad weather, the sea breaks over the reefs and rocks of Daija Guri. Stationary fishing nets are set from the S shore of the harbor up to 0.2 mile offshore. Tawara Se, a shoal, with a least depth of 7m, lies 1.75 miles E of Tatsuga Saki.

3.3 Nanatu Shima (Nanatsu Shima) (37˚36'N., 136˚53'E.), two small groups of rocky islets, lie from 11 to 13 miles N of Tatsuga Saki. The deep passage separating the two groups is over 1 mile wide, with a single rocky depth of less than 18.2m in mid-channel.

O Shima, 62m high, is the largest and highest islet in the N group. A light is shown from the islet.

Mikuriya Shima, 39m high, is the westernmost of the S group; Aramiko Shima, 43m high, is the easternmost of the S group. A detached shoal of 5.2m lies 0.5 mile E of Aramiko Shima.

Hegura Shima (Hekura-jima) (37˚51'N., 136˚55'E.), lying 14 miles N of Nanatu Shima, is a low, flat island, 11.9m high. Rocks fringe the island to a distance of 0.3 mile, and depths of less than 5.4m extend S for more than 1 mile. A light is shown from the island.

Yome Guri (37˚40'N., 137˚12'E.) is a shoal area about 1 mile in diameter, with depths of less than 18.2m, the least depth being 3.4m. Breakers usually mark the drying and sunken rocks during heavy weather. A light is shown from the E side of the shoal.

Tatsuga Saki to Kanazawa Ko

3.4 Kouire Se and Daruma Se are rocks with depths of 2.7m and 6.1m, respectively, lying within a 0.5 mile of the coast, about 3 and 1.5 miles W of Tatsuga Saki. The coast inshore of the latter rock, and E of it, is foul.

Saruyama Zaki (37˚20'N., 136˚44'E.) is the NW extremity of Noto Hanto. A light equipped with a ramark is shown from the point.

Annyomon Guri (37˚11'N., 136˚38'E.), a rocky depth of 9.4m, is the outermost of a number of dangers lying within a 5 mile radius NW of Ama Saki, located 11 miles SSW of Saruyama Zaki.

Matsugashita Byochi is a small open bay lying 2 miles SE of Ama Saki. Togi Ko, a small artificial harbor, is located in the NW part of the bay. The harbor is protected by breakwaters. There are depths in the harbor of 2.7 to 4.3m. Exposed anchorage, open from the W to S, is available in 12.8m, poor holding ground. The best berth is reported to be with Takaiwa Saki bearing about 275˚, distant 1 mile.

Fukuura Ko (37˚05'N., 136˚44'E.), a small port situated 4 miles S of Togi Ko, serves as a base for a large fishing fleet from September through May. The harbor is divided into N and S bays and affords anchorage for small vessels. A light is shown from the S end of the port. Range lights on a bearing of 090˚ lead into the harbor. Rocky reefs fringe the nearby coast.

Takahama Ko, a small fishing village, is situated about 5 miles SSE of Fukuura Ko. The village is protected by a breakwater from which a light is shown.

Abuia Gyoko, 1.25 miles WNW of Takahama Gyoko, is a small fishing harbor; a light is shown on the head of the breakwater. A tower stands at an elevation of 186m, 2.5 miles NNW of Abuia Gyoko.

A fish haven lies 2 miles WSW of Abuia Gyoko. A light is shown from a white tower, 6m high, at the head of a breakwater 2.5 miles NNW of Abuia Gyoko.

Taki Saki (Taki Zaki) (36˚55'N., 136˚45'E.) is a rounded point at the N end of a long stretch of sandy beach. Taki Ko, a small artificial harbor, is situated on the S side of the point. The harbor is protected by inner and outer breakwaters, marked by lights. According to reports, the harbor tends to be shallow due to drifting sands.

Inner breakwaters protect an inner harbor with two cambers. A lighted beacon, 7m high, stands at the root of the inner E breakwater; another light is shown from the head of this breakwater.

3.5 Kanazawa Ko (36˚37'N., 136˚36'E.) (World Port Index No. 61822) is a new harbor that replaces Kanaiwa Ko as the port for Kanazawa. The port lies at the mouth of Ono Gawa, about 1.3 miles NNE of Kaniwa Ko.

Depths—Limitations.—The approach to the basin, and the basin itself, have been dredged to 9.7 and 10m.

Oil Quay, on the NE side of the basin close within its entrance, is 620m long, with depths of 5.4 to 7.1m alongside. It is used by tankers and is divided into six berths, numbered from the SE to NW.

Goro Shima Wharf, immediately SE of Oil Quay, is 240m in length, with a depth of 9m alongside.

Gokuden Wharf, Tomizu Wharf, and Muryogi Wharf, which are separated by Tomizu Basin, occupy the head of the harbor.

Gokuden Wharf, the E wharf, is about 300m in length, with a minimum depth alongside of 8.8m.

Tomizu Wharf is 370m long, with depths of 8.6 to 9m alongside.

Muryogi Wharf is 390m long, with depths of 5.5 to 7.5m alongside.

Muryoji Pier projects N from the W end of Muryoji Wharf. Its E side is 270m in length and has a permissible depth of 5m alongside. The head of the pier and the basin on its W side are used mainly by fishing vessels.

Aspect.—The harbor is entered between West Breakwater and an area of reclaimed land. A light is shown near the head of West Breakwater and on the head of a spur which projects 91m NE from near its root.

A light is shown from the W corner of the reclaimed land. Shoaling was reported close off this light; the NW extremity of this shoaling is marked by a lighted buoy.

Pilotage.—Pilotage is not compulsory. Pilots are available only during the daytime and normally board vessels in position 36˚37'53"N, 136˚35'10"E.

Kanazawa Ko from S

Anchorage.—Except in winter, open anchorage can be obtained 1 mile W of the mouth of Sai Kawa, in depths of 11 to 15.8m, but NW winds raise a heavy sea. The bottom is mainly fine sand, and depths decrease regularly to the shore.

The quarantine anchorage is a circle of 500m radius centered 1.5 miles NW of Ono Kawa Light; there are depths of 17.1 to 26m, mud and fine sand, but in strong NW winds vessels may experience difficulty in anchoring.

Caution.—Depths of 2 to 4m less than charted exist in the entrance to the harbor.

Kanazawa Ko to Echizen Misaki

3.6 From Kanazawa Ko to Anto Saki, 32 miles SW, the coast is unbroken by sandy beaches. The 9.2m curve lies from 0.6 to 0.7 mile offshore. Gales raise a heavy sea along this coast, which offers no shelter to shipping.

Between Anto Saki and Echizen Misaki, 18 miles distant, the S half is cliffs backed by mountains with rocks up to 0.5 mile offshore. Sandy beaches with pine trees comprise the N section.

Mikawa (36˚29'N., 136˚29'E.) is a small port situated at the mouth of Tetori Kawa. A light is shown from the NE side of the mouth of the river. There is suitable anchorage for small boats 1 mile offshore, with good holding ground.

Hasitate Ko (Hashitate Ko) is a small fishing harbor situated 11 miles SW of Mikawa. The harbor is protected by three breakwaters. Because of the reefs in the area of the harbor, it should not be approached without local knowledge.

Shioya Ko is a small village on the N bank of Daishoji Kawa, near its mouth. A red hill, 61m high and surmounted by a clump of pine trees, is located near the coast, SW of the village.

Kasano Misaki (36˚21'N., 136˚18'E.) is a rocky, densely-wooded point, which is conspicuous from the SW. The point is entirely surrounded by foul ground. A detached 14.9m depth lies nearly 1 mile N of the point; another similar depth lies 1.5 miles NE of the point.

The harbor entrance is protected by East Breakwater, West Breakwater, and the detached North Breakwater. Old Breakwater protects the inner basin. Lights are shown on the breakwater heads. There is good holding ground, in depths of 14.9m, outside the harbor.

Anto Saki (36˚15'N., 136˚07'E.), a wooded point, lies 6.5 miles SW of Shioya Ko. A bridge connects the close-lying islet O Shima to the mainland. Numerous dwellings are situated on the point and a light is shown from the islet.

3.7 **Mikuni Ko** (36˚13'N., 136˚09'E.) (World Port Index No. 61820) is a small village situated at the mouth of Kuzurya Gawa. The port is used by fishing boats and small tankers of up to 500 dwt. Small boats can navigate the river as far as Fukui, 10 miles upstream. The port is protected by a number of breakwaters. The entrance breakwater extends WSW for about 0.2 mile from the N entrance point of the river.

Anchorage.—The holding ground in the inner anchorage, sand over rock, is poor. Exposed anchorage off the port is available, in 11 to 16.4m, sand bottom.

Gentatu Se (Gentatsu Se) (36˚13'N., 135˚45'E.), a shoal area, with a least depth of about 10.4m, lies 19 miles offshore W of Mikuni Ko.

Fujiutsushiga Take, 942m high, located 11 miles E of Mikuni Ko, appears to have three sharp peaks when seen from the W and a single peak when viewed from the N.

Table of Contents

Kame Shima (36˚07'N., 136˚03'E.), a flat wooded islet, 45m high, lies close offshore with a rocky depth of 4m close N.

Echizen Misaki (35˚59'N., 135˚58'E.) is a cliff faced point, fringed by rocks, extending close offshore. From the point to Oka Zaki, 16 miles SSE, the coast is mainly rocky cliffs fringed with reefs and backed by ranges of wooded hills. A light is shown from Echizen Misaki.

Turuga Wan

3.8 Turuga Wan (Tsuruga Wan) is a large protected bay entered between Oka Zaki and Tateisi Saki. From the entrance, the inlet extends S about 6 miles, with a general width of about 2 miles. High hills protect the bay on all sides, except the N, which is open and exposed to winter gales from that quarter. During this weather, a heavy swell sets into the bay. The bay is divided into five sections, which are clearly marked on the charts. There is good anchorage in the bay, particularly in Section 3 and Section 5. Several charted fish havens lie in Tsuruga Wan.

Turuga Ko (35˚39'N., 136˚04'E.)

World Port Index No. 61810

3.9 Turuga Ko, a port of entry, is one of the principal ports on the NW coast of Honshu and lies at the head of Turuga Wan. The harbor is protected by a breakwater with a length of 1,105m.

Winds—Weather.—During winter and autumn, the prevailing winds are N; in spring and summer, the S wind predominates. Storms occur mostly in winter.

Depths—Limitations.—The approach to the port is via a 6 mile long passage from the entrance to Wakasa Bay. The maximum depth of water in Outer Harbor is 22m and 10m in the inner harbor. The largest vessel accommodated was 35,000 dwt and 300m loa. Owing to the topography in the vicinity of the bay, the winds blow strongest from the N and S. Kanegasaki Wharf Berth A and Kanegasaki Wharf Berth B are being reclaimed.

Berth	Length	Depth
Sakura Wharf (E, F)	180m	3.0m
Horai Wharf (G, H, I)	390m	3.6m
Kawasaki Matsui Wharf (A)	—	8-8.2m
Kawasaki Matsui Wharf (B, C, D)	370m	9.7-10m
JNR Wharf	164m	8.9m
Turuga Cement Wharf	260m	7.5m
Nihon Genden Jetty	87m	6m

Aspect.—A breakwater extends 0.35 mile W from Tayu Saki, a headland 1.5 miles S of **Matsuga Saki** (35˚40'N., 136˚05'E.). A light stands at the head of the breakwater. The breakwater have been extended. The area between the root of the above breakwater and a position close E of Kanega Saki has been reclaimed and quayed.

Pilotage.—Pilots are available, but pilotage is not compulsory. Pilots board by arrangement at the quarantine anchorage during daylight hours only.

Anchorage.—A circular quarantine anchorage, 0.25 mile in radius, with a depth of 20.1m, mud, is situated in Jogu Wan, on the W shore of Tsuruga Wan. Care must be used to avoid fishing nets in the bay.

Anchorage, in 20m, mud, is available for large vessels NW of the end of the breakwater. There are two mooring buoys for vessels up to 10,000 grt on the W side of the quarantine anchorage. Vessels carrying dangerous cargo should not anchor in Area No. 1 or Area No. 5.

Two buoys, with depths alongside of 17 and 20m, exist for vessels of 10,000 grt and 20,000 grt.

Caution.—Depths at Horai Wharf (Berth H and Berth I) are up to 1.5m shallower than charted. Depths at Kawasaki Matsui Wharf (Berth A through Berth D) are up to 1.6m shallower than charted.

Pearl rafts are set from April through December on the W side of Nago Saki. There are numerous fish nets and pearl rafts on both sides of Urazoko Wan.

During strong NW winds, a swell sometimes sets into the inner harbor making it necessary for vessels lying alongside to breast-off to avoid damage.

Tateisi Saki to Bakuchi Misaki

3.10 **Tateisi Saki** (Tateishi Saki) (35˚46'N., 136˚01'E.), the N end of Tateisi Hanto, is the W entrance point to Tsuruga Wan. The reddish headland is 161m high. A light is shown from the point.

A breakwater extends about 0.4 mile SW from the shore, about 1.5 miles SW of Tateisi Saki.

Nyu Ura, a small cove in the lee of a hook-shaped peninsula, is located 5 miles SSW of Tateisi Saki. Depths in the cove, which opens to the S and is narrow, range from 2 to 4m at the entrance. Depths inside the cove range from 7 to 13m. The entrance is spanned by a bridge, with a vertical clearance of 14.9m and a fairway width of 79m.

Funatoshi Saki Light is shown on the W extremity of the point, and an auxiliary light, shown from the same position, illuminates a drying reef 0.2 mile W. A light is shown about 0.7 mile SSE of Funatoshi Saki Light.

Kabutoga Saki (35˚38'N., 135˚54'E.), a headland, lies 5 miles SW of Nyu Ura. A rocky depth of 4.6m lies 0.6 mile NW of the point. Four lagoons lie within 4 miles S of the point. Two of the lagoons are deep, but the entrances of all of them are narrow and only small craft can safely enter them.

3.11 **Tunekami Saki** (Tsunekami Saki) (35˚38'N., 135˚49'E.) is about 239m high and lies about 5 miles WNW of Kabutoga Saki. The NW side of the point is surrounded by rocks and reefs. South of the point, the irregular shoreline is broken by Yashiro Wan and Sekumi Wan; these two small bays are separated by Kuro Zaki, a promontory extending 2 miles NW from the middle of an open bight. These open bays are too exposed for anchorage.

Ogami Shima, a conspicuous high islet with a thickly-wooded summit, lies 0.25 mile W of Tunekami Saki. There is a sharp peak, 196m high at its N end, that is prominent. The deep

Return to paragraph: 2.39

channel between the islet and the mainland is reduced to a width of about 0.1 mile by reefs that should not be attempted without local knowledge.

Okino Ishi (35˚35'N., 135˚47'E.), 6.4m high, lies in the approach to Yashiro Wan, about 1.3 miles WNW of Kuro Saki. Foul ground extends 0.5 mile NE of the islet.

Chi Shima, 36.9m high, lies in the approach to Sekumi Wan, about 1.5 mile NNE of Okino Ishi. Shoal banks extend about 0.3 mile N and S of the islet.

Kusuyaga Take (35˚33'N., 135˚44'E.), 619m high, rises 2.75 miles WSW of Okino Ishi. The E slope gradually descends to the isthmus of a peninsula. The N side is a sharply-declining cliff, with several waterfalls. The mountain is prominent as a landmark for identifying Obama Wan. In clear weather, the mountain is visible over 25 miles.

Matsuga Saki, the NE entrance point of Obama Wan, is a cliffy point with a high, rocky projection extending from its N side. Reefs fringe the point up to 0.1 mile.

Obama Wan is entered between Matsuga Saki and Nokogiri Zaki, about 1.3 miles W. Obama Ko is located on the SE shore of the bay. The bay affords good anchorage to vessels with local knowledge.

3.12 **Obama Ko** (35˚30'N., 135˚45'E.) (World Port Index No. 61805) is a fishing harbor located on the SE shore of the bay at the mouths of Minami Gawa and Kita Gawa. Two breakwaters, situated on the N and S side of the entrance, protect the harbor.

Depths—Limitations.—The fairway depths in the entrance to the bay are not less than 25.6m, and there are general depths of more than 9.2m throughout most of the bay. Depths in the E and W arms shoal gradually to 3.6m and 5.4m. There is a channel depth of 2.5m at the river entrance and 2m inside the basin.

Depths in the harbor and vicinity are subject to change due to silting.

Anchorage.—Vessels anchor off Obama Ko, in 6.4m, mud and sand. Larger vessels are advised to anchor in the W end of the bay, according to draft, keeping clear of the cable area. Temporary anchorage may be taken in Katsumi Ura.

Nokogiri Zaki (35˚33'N., 135˚40'E.), the E entrance point to Takahama Wan, is also the W entrance point to Obama Wan. Sunken and above-water rocks extend 0.15 mile from the point. The ruins of a fort stand at the foot of a conical hill near the point. A light is shown from the point.

Takahama Wan, a relatively large open bay, lies between Nokogiri Zaki and Imado Hana. The shores of the bay are fringed with islets and sunken rocks to a distance of 0.5 mile in places. Fuku Guri, an isolated, rocky depth of 6.2m, lying 0.8 mile off the SW shore of the bay, is the only off-lying danger. During N gales, a heavy swell sets into the bay making it unsuitable as an anchorage. Takahama, a fishing harbor, is located near the center of the head of the bay. Takate Guri, a rocky depth of 10.7m, lies 3 miles offshore in the approach to Takahama Wan.

3.13 **Uchiura Wan** (35˚33'N., 135˚29'E.), an inlet with six coves, is entered between Kabuto Zaki and Oshimawari Saki. The depths in this inlet decrease from about 42.1m in the entrance; the bottom is mostly mud or fine sand.

Uchiura Ko, a local port, occupies the central and E coves at the head of Uchiura Wan.

Depths—Limitations.—A short breakwater is situated on the SW side of the S cove of Uchiura Ko; it protects a quay, 80m long.

A large factory is situated on the E side of the head of the harbor. It is served by quays, 160m long, with a reported depth of 10m alongside, and 140m long, with a depth of 4.5m alongside.

Pilotage.—Pilotage is not compulsory. If required, a pilot will come from Maizuru, 10 miles WSW, and will board at the quarantine anchorage between sunrise and sunset.

Anchorage.—Anchorage is very secure, in depths of 14.9 to 25m. During strong onshore winds, the likelihood of dragging is remote.

3.14 Ke Shima, faced with cliffs, has a conspicuous high, sharp summit near the S end. Above-water rocks extend N for 0.15 mile off the N end of the island. From October to March and during June and July, large fishnets are laid in the vicinity of the island.

Naryu Zaki (35˚36'N., 135˚28'E.) is a cliffy, steep-to headland with close-lying, unusual rock formations. Two grass covered hills on the cape are prominent from a distance. Between this headland and Bakuchi Misaki, 6.75 miles SW, the rugged coast is fringed with dangers which extend in places more than 1 mile offshore. Naryu Saki Light is shown on the headland from a tower, 9.2m high.

Oki-Kazura Shima is the N islet in a group lying on a spit of foul ground which extends over 1 mile N from the coast, midway between Naryu Zaki and Bakuchi Misaki.

Bakuchi Misaki (35˚33'N., 135˚21'E.), the E entrance point to Maizuru Wan, is a densely-wooded headland faced with reddish cliffs on the N side. Kabura Guri, a rock 1m high, lies 0.1 mile N of the point, and the 18.2m curve lies 90m N of the rock. A light is shown from the point.

Maizuru Wan (35˚22'N., 135˚20'E.) is entered between Bakuchi Misaki and Kanega Saki. The inlet extends SSE for 2 miles, with a least width of 0.2 mile between the two 18.2m curves and then divides into two branches. The W branch continues 3 miles SSW and the other branch extends 3 miles to the E. The fairways are marked by buoys and lights.

Maizuru Ko (35˚31'N., 135˚20'E.)

World Port Index No. 61800

3.15 Maizuru Ko, a port of entry, includes all of Maizuru W and inshore of a line extending N from Kanega Saki to the intersection of a line extending W from Bakuchi Misaki. It is divided into three sections. Section I, known as West Harbor, is the commercial port and comprises that area lying S of a line extending W from Nio Saki to the opposite shore. Section II, known as East Harbor, formerly a military harbor, is used mainly as a port for government vessels. This section comprises that area S of a line W from Matsuga Saki to Sii Saki on the opposite shore. Section III includes all areas within the harbor limits not included in Section I and II.

In Section I, the berths are situated in the S and SE area where Takano Gawa and Isatu Kawa flow into the bay. Facil-

Table of Contents

ities of the commercial port are concentrated along the S shore; fishing harbor facilities are along the E shore.

Timber storage areas are situated in Section I at Kita and at Okimi, Yoshida and Katsura in Section III.

Depths—Limitations.—Section I has a dredged channel leading to the berths; the outer portion is dredged to 12m, while the inner portion is dredged to 10m. Vessels of 15,000 grt, 182m long, drawing up to 9.2m, berth alongside in Section I.

In Section III, a T-head pier lies close E of Naga Saki. The pier can accommodate ships of 10,000 grt, drawing 7.3m.

There are several berths at anchor buoys which are reserved for vessels in the lumber trade. Ships of 15,000 grt, drawing up to 9.2m, use these berths.

Pilotage.—Pilotage is not compulsory, but pilots are available and will meet incoming vessels by arrangement. Pilots will board only during daylight hours, near the harbor limit off the entrance. During bad weather, pilots board in the vicinity of Matsuga Saki. Vessels awaiting pilots anchor 1 mile NW of Kanega Saki.

However, pilotage is compulsory for all vessels berthing and unberthing at Taira Buoy No. 2.

Regulations.—Vessels over 100 grt shall display the following signals from the foremast from the time passing Bakuchi Misaki until secured:

1. Answering pennant over International Code flag W—When bound for Section I (West Harbor).
2. Answering pennant over International Code flag E—When bound for Section II (East Harbor).

Vessels desiring to shift berth in the harbor will display, at the foremast, the following signals when underway:

1. First Repeater Pennant over International Code flag E—When shifting from Section I (West Harbor) to Section II (East Harbor).
2. First Repeater Pennant over International Code flag W— When shifting from Section II (East Harbor) to Section I (West Harbor).

Anchorage.—Sheltered anchorage, protected from all winds, is available throughout Maizuru Wan. Vessels anchor as convenient, mostly mud bottom.

Quarantine anchorages are situated NNW of Ushikuso Hana and S of To Shima.

Kanega Saki to Miyazu Ko

3.16 Kanega Saki (35˚31'N., 135˚20'E.), situated about 1.8 miles NE of the mouth of the Yura Gawa, is the SW entrance point of Maizuru Wan. A prominent hill, 215m high, rises 0.3 mile SW of the point.

Yura Gawa flows into Wakasa Wan, between Kunda Wan and Maizuru Wan. A shallow, shifting bar, less than 1m deep, encumbers the river mouth, which is less than 90m wide; a bridge spans the channel 0.3 mile within the entrance.

Mamo Shima (35˚32'N., 135˚16'E.) is a small, wooded, rocky islet, 24m high, lying close off a small point, located 2.5 miles WNW of Kanega Saki. A rocky, shoal spit extends 0.15 mile NE of the point, and an isolated rocky patch, 12.2m deep, lies 0.25 mile NW of the islet.

Kunda Wan lies between Musoga Hana and **Mamo Shima** (35˚32'N., 135˚16'E.). The bay is about 1.5 miles in width and indentation. The bay shoals from 30m at its entrance to 10.1m within 0.17 mile of the shore in the S end of the bay. The NE shore of the bay is cliffy and fringed with rocks.

A small harbor, protected from the E by an angled breakwater, lies at the head of the bay.

Aspect.—Shiro Yama, 1.25 miles W of Musoga Hana, is 78m high, the prominent wooded summit of a small peninsula.

Two berths, with depths from 6 to 8m alongside, have been constructed on reclaimed land on the N side of an inlet, situated 1 mile WSW of Musoga Hana. A chimney, with an elevation of 198m, and four tanks stand close N of these berths. Two mooring buoys lie close together, 0.2 mile S of these berths.

Anchorage.—Vessels anchor as convenient in the bay, mud bottom, good holding ground. A cove in the lee of the peninsula affords sheltered anchorage, in 14.6m, protected from all but S winds.

Musoga Hana separates Shimakage Wan on the N from Kunda Wan on the S. Rocks and reefs extend seaward, almost 0.3 mile off the point. A fish haven lies 0.4 mile N of Musoga Hana.

Caution.—An underwater obstruction lies 0.6 mile SW of Shiro Yama; a fish haven, with a depth of 17.2m, lies 0.6 mile SSE of the same summit. A wave meter, marked by a lighted buoy, lies about 0.9 mile ENE of Momo Shima.

3.17 Shimakage Wan (Shimakage Wan) (35˚34'N., 135˚16'E.), a bight between Kuro Saki and Musoga Hana, is open to the N. The shoreline is mostly cliffs, fringed with rocky reefs, and stationary fish nets are set at various places within 0.75 mile offshore.

Miyazu Wan is an inlet entered between Hami Saki and Kuro Saki, about 1.3 miles SSE. A light is shown from Kuro Saki. Its W side is mostly sandy beach, fringed by a shallow bank, extending as much as 0.3 mile offshore in places. The E side is indented, most of the points terminating in cliffs. The bay is about 1.4 miles wide and 5 miles long. The port of Miyazu Ko covers most of the S end of the bay.

Aso Kai, a lagoon off the W shore of the bay, is separated from the bay by Amano Hashidate, a narrow pine covered spit of white sand almost 2 miles long. Monju Suido, the channel which connects the bay and lagoon, is located at the S end of the spit. This passage is about 840m long, 27m wide, and from 2 to 3m deep.

Tides—Currents.—The tidal currents in the bay move parallel to the shore. Rising and falling tides move SW and NE, respectively, with a maximum rate of 0.75 knot.

Depths—Limitations.—Depths in the bay decrease gradually from 27.4m in the entrance; the 9.2m curve lies close to shore in most places. The middle part of the bay, generally used by traffic, has depths exceeding 14.9m. Dangers in the bay are best located by chart observation.

Aspect.—A conspicuous cable railway runs up the slope of a hill at the NE end of Aso Kai. A light is shown from the top.

A conspicuous white chimney, 41m high, is situated about 350m E of the railway station; a radio tower, 74m high, stands 600m NE of the station.

Pilotage.—Pilotage is not compulsory, however, harbor pilots are available at Kurosaki Anchorage. Berthing is done during daylight hours only; unberthing may be done any time subject to adequate notice and approval from the pilot.

Miyazu Ko from N

3.18 Miyazu Ko (35˚32'N., 135˚12'E.) (World Port Index No. 61790), a port of entry, is situated at the mouth of Ote Kawa, which flows into the head of Miyazu Wan. It is divided into four areas, the limits of which are shown on the chart.

Depths—Limitations.—The largest vessel accommodated was reported to have a 188m loa and a capacity of 32,875 dwt. Available berths are No. 2 Wharf, 210m long, with a depth alongside of 5.3m; Tsuruga Wharf, 140m long, with a depth alongside of 5m; and Mooring Buoy No. 1, available for vessels up to 15,000 grt. There are also anchorage berths for loading and unloading, in depths of 13 to 14m. The draft in the channel is limited to 10m.

Pilotage.—Pilotage is not compulsory. Harbor pilots are available at Kurosaki Anchorage. Berthing is performed during daylight hours only; unberthing can be done at any time subject to adequate notice and approval from the pilot.

Anchorage.—Vessels anchor as convenient inside the harbor limits, except during strong N winds. The most-sheltered anchorage is S of the parallel of Shishi Zaki in 14m, mud. Large vessels anchor about 0.5 mile off the dock area; small vessels anchor closer inshore. During strong N winds, some sea and swell sets into the bay.

Hami Saki to Kyoga Saki

3.19 Hami Saki (35˚37'N., 135˚15'E.), the N entrance point to Miyazu Wan, is fringed by reefs for 0.1 mile offshore. A clump of pines on the point makes a good target from the N or S.

Ine Ko is a small cove, 3.5 miles NNE of Hami Saki, that affords sheltered anchorage to small vessels in 23m, mud and sand. The main channel into the cove is 0.1 mile wide between the 18.2m curves. Lights mark the entrance to the cove.

Hami Saki Light

Wasi Saki (Washi Zaki) (35˚40'N., 135˚18'E.), a cliffy headland, is marked by a rock, 2m high, lying close off the SE end of the point. The currents in the vicinity of Wasi Saki are generally weak, but during N winds, a SE set with a velocity of 1 knot has been experienced 3 miles ENE of the point. Fishing nets may be encountered up to 0.75 mile offshore in this vicinity.

Nii Saki is a low, rocky point located 2 miles N of Wasi Saki. Vessels should steer clear of the point during strong winter gales from the NW, because of heavy seas off the point. There

Table of Contents

is a cove at Odomari, about 1 mile NW of the point, but due to rocks at the entrance, is only available to small boats.

Between Nii Saki and Kyoga Saki, the coast is steep-to and faced with cliffs. Taitsuri Shima, a conspicuous pointed rock, 17.9m high, lies 2.75 miles NNW of Nii Saki. Kabuto Saki is a densely wooded, cliffy headland about 2 miles SE of Kyoga Saki. A fish haven lies about 1 mile offshore ENE of Kabuto Saki. Honjo Ko is situated in a small bay close to the S of Kabuto Saki. A light is shown from the breakwater protecting Honjo Ko.

Kyoga Saki (35˚46'N., 135˚14'E.) is a rounded headland fringed with rocks for a short distance seaward. The point is the W entrance point of Wakasa Wan. There are no harbors of any consequences and no dangers more than 0.25 mile offshore between Kyoga Saki and Taiza Kaku. There is an isolated rock, 3.1m high, about 2 miles W of the point.

Kyoga Misaki Light is shown from a round tower, 11.9m high, standing on the NE slope. A ramark is operated at the light.

Two radio towers and a radar dome stand on a summit, 1 mile S of Kyoga Misaki; from the E, the towers are obscured by the dome.

Wakasa Wan

3.20 Wakasa Wan is a large open bay lying between Kyoga Saki and Echizen Misaki, a distance of 38 miles. The harbors of Miyazu Ko (previously described in paragraph 3.18) and Maizuru Ko (previously described in paragraph 3.15) are located in the W part of the bay, Obama Ko (previously described in paragraph 3.12) is located in the central part of the bay, and Turuga Ko (previously described in paragraph 3.9) is located in the E part of the bay.

On a line from Kyoga Saki to Tateishi Saki, on the E side of the bay, depths range from 36.5m to 183m. Depths decrease toward the head of the bay, but in general the headlands along the S shore are steep-to.

Caution.—Fishing buoys, made of bundles of bamboo, may be encountered in the approaches to Wakasa Wan as far as 20 miles NE of Kyoga Saki from July through October.

A group of islets and rocks, some 3 miles long, N and S, are centered 5.5 miles E of Nii Zaki. Kammuri-jima, the largest and southernmost, is cliffy with a thickly wooded summit, 170m high. Reefs and breaking rocks extend 137m SSE from the islet. Kutsu-jima, the N islet, consists of two rocky, close-lying islets. The S and largest is sparsely wooded and cliffy on the E side, with a sharp summit, 74m high, at the N end. The N islet is a bare cylindrical rock with a blunt summit, 92m high. Reefs extend S for 0.2 mile from the S islet, and O Guri, an isolated, steep-to, rocky depth, lies 0.6 mile N of the N islet. The sea breaks over the patch from heavy swells. A number of fish havens lie up to 4.5 miles W of the islets.

Asa Guri (35˚37'N., 135˚35'E.), an isolated group of rocks 5.75 miles E of Naryu Saki, has a least depth of 5.2m. Takate Guri, a rocky depth of 10.6m, lies about 2 miles SSE of Asa Guri.

Kyoga Saki to Kasumi Ko

3.21 **Nishi Saki** (35˚45'N., 135˚11'E.), about 2.5 miles WSW of Kyoga Saki, has the fishing village of Nakahama Ko close on its E shore. The approach to the village is difficult because of the many rocks and shoals. There is a small dock in the port, protected by a breakwater. The port is mainly used by small craft with local knowledge. A light is shown from the breakwater.

Inu Zaki (Inuga Zaki), about 2 miles W of Nishi Saki, has a remarkable rounded summit, 260m high. A conspicuous, upright, pointed rock lies close off the point.

Taiza Ko (35˚44'N., 135˚05'E.) is located on a cliffy headland, fringed with foul ground up to 0.3 mile. Shiro Shima, an islet, lies close off the point. The small port is protected by a breakwater.

Ana Saki, a bold headland faced with cliffs on its W side, is 84m high, and is located about 6 miles SW of Taiza Ko. Ashiura Yama, about 9 miles SSE of Ana Saki, is a prominent barren plateau, 661m high.

A shoal, with a depth of 6.3m, was reported (1998) in position 35˚44'.7N, 135˚06'.0E close off Taiza Ko.

Kumihama Wan (35˚38'N., 134˚55'E.) is a rather extensive saltwater lagoon, separated from the sea by a sandy spit. The approach to the lagoon is encumbered with sunken and above-water rocks, and a heavy sea runs in on the coast, particularly in winter.

Two artificial channels lead into the lagoon. Currents in the channels reach a velocity of 3 knots. An overhead cable, with a vertical clearance of 24m, spans the main channel. The town of Kumihama is situated at the head of the lagoon. Kumihama Wan provides safe anchorage for small craft, in depths of up to 18m.

Takeno Guri is a rocky depth of 3.1m, located 1.75 miles NNW of Kumihana Wan entrance. It is the outermost danger on this part of the coast.

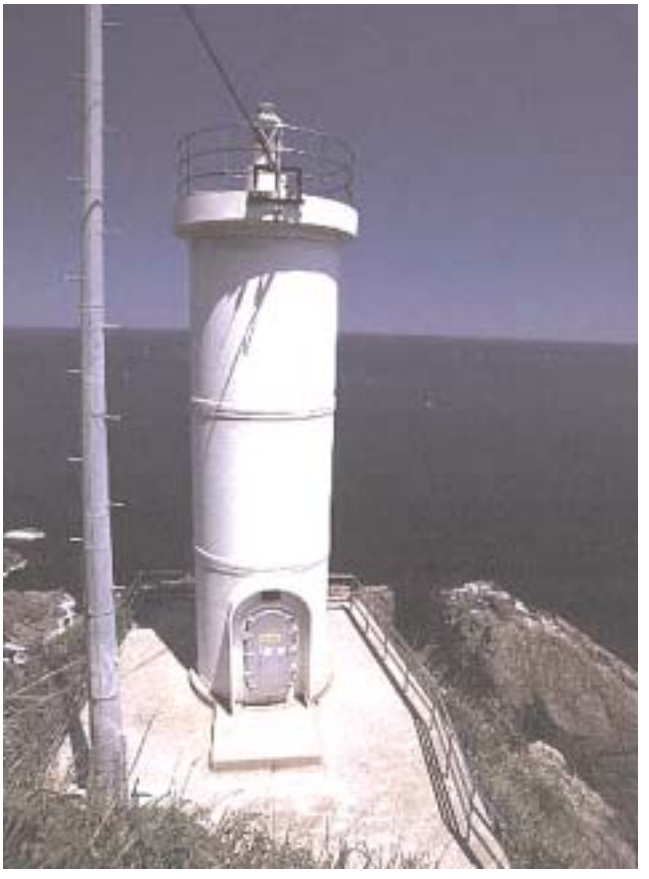
3.22 **Tsuiyama Ko** (35˚39'N., 134˚51'E.) (World Port Index No. 61785), located 3 miles W of Kumihama Wan, is 0.5 mile wide and indents the coast for about 1 mile. Maruyama Kawa flows into the SW corner of the harbor and affords good shelter for small craft. Tsuiyama Shima, separated from the coast by a narrow shallow channel, only used by small craft with local knowledge, lies on the W side of the entrance to Tsuiyama Ko. Lights are shown from the NE point of the island and the N side of the entrance to Tsuiyama Ko.

Pilotage.—Pilotage is not compulsory. Pilots are available at Maizuru, 26 miles ESE. Entry and departure are permitted during daylight hours only.

Anchorage.—Anchorage is available W of the harbor breakwater, in 4 to 4.9m, mud. Vessels of 500 grt anchor outside the basin, in 7 to 15m, sand. With winds from the W through N, the swell makes the bay untenable, except inside the basin.

Oto Guri, a rocky depth of 4.6m, lies 0.5 mile offshore in the center of the approach.

Neko Saki (35˚40'N., 134˚46'E.), a narrow, thickly-wooded peninsula, is located 4 miles WNW of Tsuiyama Ko. The summit attains an elevation of 141m and is connected to the coast by a sandy isthmus. From a distance the peninsula appears as an island. A detached rocky patch, with a depth of



Neko Saki Light

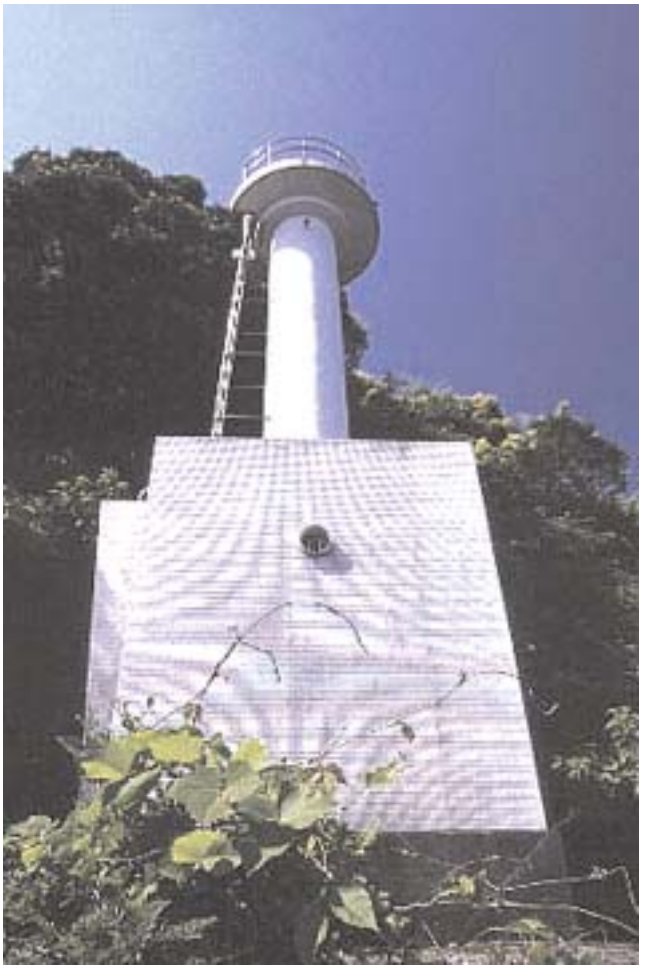
12.3m, lies about 0.4 mile N of the point. A light is shown from the point.

Shibayama Ko, located about 4.5 miles W of Neko Saki, is a narrow inlet, with depths ranging from 20.1m in the entrance to 3.6m at the S end. Several villages are situated around the shores of the bay, which affords anchorage only to small vessels. The bay is open to the N and when a swell sets in, the whole bay becomes untenable.

3.23 Kasumi Ko (35˚39'N., 134˚38'E.) (World Port Index No. 61780) is a fishing port situated 2.5 miles SW of Shibayama Ko. The bay, about 2 miles wide at the entrance, is divided into two parts by a peninsula. Nishi Hama lies to the W and Higashi Hama to the E. Commercially, the basin on the W side of the peninsula is the most important, while the E side serves as a fishing harbor. The harbor is protected by breakwaters.

Anchorage.—Vessels anchor in the middle of the inlet, in depths of 9.2m, sand. Small vessels anchor inside the breakwaters, in depths of 3.1 to 4.9m.

Shiraishi Shima, a wooded islet, and Kuro Shima, with a pointed summit, lie in the E approach to Kasumi Ko. Numerous rocks fringe the islets and a depth of about 1m lies midway between Shiraishi Shima and the peninsula.



Shibayama Ko Light

Amarube Saki to Saki Ko

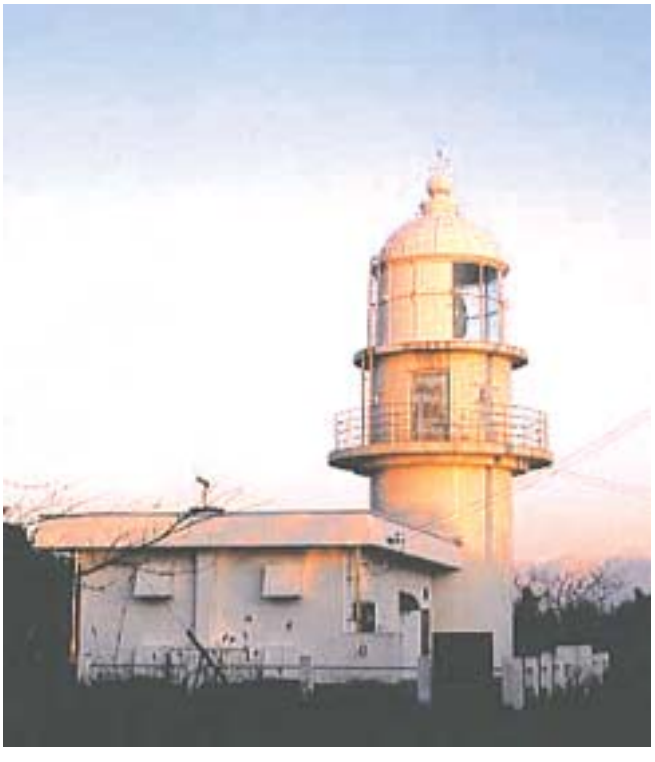
3.24 Amarube Saki (35˚40'N., 134˚32'E.) is a steep-to, prominent headland located 4.5 miles WNW of Kasumi Ko. The point is densely wooded and faced by cliffs that rise to a height of 270m. A bare, rounded hill, 551m high, stands 1.5 miles SSW of the point. When seen from the N, the hill appears to have two summits. Two miles SE of the point, the triangular white cliff at Matsuga Saki is conspicuous, especially from the NE.

Amarube Saki Light is shown on the middle slopes of the headland, 0.25 mile SSE of the extremity. A second light is shown on the point from a framework structure, 6m high.

Moroyose Ko (35˚37'N., 134˚26'E.), a small cove at the head of a larger bay, is located about 6 miles WSW of Amarube Saki. The port is considered the best natural fishing harbor on this part of the coast. A light is shown from the SE corner of the port. West of the fishing harbor is a marina, with depths of less than 3.1m, protected by breakwaters. Anchorage depths in the bay range from 4.9 to 10.1m. Taziri Ko, a fishing harbor protected by breakwaters, lies 1.25 miles ENE of Ajiro Saki.

Kasumi Ko Light

Moroyose Ko Light



Amarube Saki Light

Ajiro Saki is a reddish colored rocky point, located about 1 mile W of a thickly-wooded summit, 203m high. Ajiro Ko is a fishing harbor, protected by breakwaters, on the S side of Ajiro Saki. The depths in the harbor are less than 3.1m. Drifting sands from the Kamo Kawa make the narrow harbor entrance shallower at times.

3.25 Shichiyama Saki (35˚34'N., 134˚17'E.) is a steep grassy point which rises at the summit of Shichiyama to a height of 314m, and lies about 1.5 miles SW of Ajiro Saki.

Shichiyama Saki marks the boundary between sandy beaches and low dunes to the W, and the steep and rugged coastline, backed by mountains, to the E.

Amo Shima, an islet 21m high, lies 0.75 mile offshore, about 2 miles W of Shichiyama Saki.

Karo Ko (Tottori Ko), a small harbor at the mouth of Sendai Kawa, is located about 5 miles WSW of Shichiyama Saki. The harbor is a fishing port protected by two breakwaters. North winds raise a heavy sea at the harbor entrance, making entry dangerous. The channel from the harbor entrance to the main pier has a depth of 5.5m during good weather. Toriga Shima, an islet 27m high, lies close N of the river entrance.

Nagao Hana (35˚32'N., 134˚00'E.), a rugged wooded cape, 81m high, lies 8.5 miles W of Karo Ko. About 7 miles SSE of the cape stands Jubo San, 921m high. The summit of this mountain forms a prominent landmark.

Tomari Ko, a small fishing harbor, lies 3.5 miles WSW of Nagao Hana. The harbor, with depths of 1 to 3m, is protected by three breakwaters. During strong W winds, heavy seas enter the harbor. The coast W of this area is mainly sandy beaches and alternating high cliffs. A number of small fishing harbors lie between Tomari Ko and Mi Saki, 17 miles farther W.

Mikuriya Saki (35˚30'N., 133˚30'E.), a low, shingle-fringed point, is located 4.75 miles WSW of Mi Saki. The point marks the E entrance side of Miho Wan.

Miho Wan, a bight open to the NE, is entered between Jizo Saki and Mikuriya Saki. Depths in the bay decrease gradually from 31m at the entrance, to the sandy beaches of the shore. Several charted fish havens exist throughout Miho Wan. The bottom in most parts of the bay is mud and sand. The Hino Gawa flows into the head of Miho Wan on its S shore. Sakai Ko, a port of entry, lies on the NW shore of the bay.

Naka Umi (35˚28'N., 133˚12'E.) is a large saltwater lagoon W of Miho Wan. The central part of the lagoon has a flat bottom with depths of 5.8 to 8.9m. Two islands, Daikon Shima and E Shima, lie in the N end of the lagoon. Nakaeno Seto, the narrow passage from Miho Wan into Naka Umi, is marked by buoys and lighted ranges.

Sinzi Ko (Shinji Ko) is a large freshwater lake W of Naka Umi, to which it is connected by the Okyo Gawa. The lake is 9 miles long and 3 miles wide. Depths in its center range from 4.9 to 5.8m.

Sakai Ko (35˚33'N., 133˚15'E.)

World Port Index No. 61750

3.26 Sakai Ko is a port of entry, located in the NW part of Miho Wan, on the S side of the E end of Nakaeno Seto. Sakai Ko is entered S of Sakai Breakwater (35˚33'N., 133˚16'E.).

Winds—Weather.—Strong NW winds prevail during the winter months. The E wind predominates in March. Light S winds are common in summer and by October, bad weather sets in again. Fog accompanies E winds in early summer, but usually dissipates within 2 to 3 hours. Winds will frequently blow from one direction for extended periods, sometimes as long as 20 days.

Tides—Currents.—The rising tide sets into Nakano Seto from 3 hours after LW until 3 hours after HW; the falling tide sets seaward for the remainder of the cycle. Tidal currents are weak inside the harbor.

Depths—Limitations.—Thendraft limitation in North Passage is 14m; a maximum draft of 10.1m is permitted in South Passage.

Nakaeno Quay, which is situated 1.75 miles SW of Sakai Breakwater Light, has a total length of about 600m, with depths from 5.7 to 9.8m alongside.

Showa South Quay is situated 1.25 miles SW of Sakai Breakwater Light. Showa South Quay No. 1 is 270m in length, with a depth of 13m and a 40,000 dwt capacity; Showa South Quay No. 2 is 185m in length, with a depth 10m and a capacity of 15,000 dwt.

Showa North Quay, situated 0.5 mile WSW of Sakai Breakwater Light, is 360m long and provides berths for vessels of up to 700 dwt.

Close NE of Showa North Quay are four sets of dolphins fronting an oil berth, with a depth of to 7.7m alongside.

A groin lies between the oil berth and Sakai Breakwater Light.

Gaiko Wharf (Outer Harbor Wharf), providing berths for vessels up to 10,000 dwt, is situated on reclaimed land on the S side of the entrance to Nakaeno Seto, close E of the city of Sakaiminato. Depths at the quays range from 2.5 to 9m. The private berthing spaces can accommodate much larger vessels, the largest being the General Oil Berth, a dolphin berth with a 230,000 dwt capacity and an alongside depth of 16m.

Pilotage.—Pilots are available, but not compulsory. Pilots are available during daylight hours only and board 1.5 miles E of Sakai Ko Breakwater Light.

Anchorage.—Good anchorage is available outside the harbor breakwater, in 10.9 to 14.6m, sand and mud, good holding ground.

A circular quarantine anchorage, about 0.5 mile in diameter, is centered about 1 mile SSE of the end of the breakwater entrance. However, the quarantine anchorage is not suitable for large vessels, which should anchor 2 miles ESE of Sakai Breakwater Light.

Zizo Saki (Jizo Saki) to Hinomi Saki

3.27 From Zizo Saki, the coast trends WSW for 36 miles to Hinomi Saki. The coast is rocky and generally steep-to, with no dangers more than a mile offshore. The W half of this section of coast is comparatively regular, but the E part is broken by numerous small inlets. A range of hills backs the entire length of this section of coast.

Oki Gunto, a group of islands, lies 25 miles N of the coast. The E current between the islands and the mainland runs strong during periods of SW winds. The islands are described in paragraph 3.30.

Zizo Saki (35˚34'N., 133˚20'E.) is the E end of a rugged peninsula that forms the N side of Miho Wan. Chinogozen-jima, a group of four, above-water rocks, lie 0.15 mile NE of the point.

Okinogosen-jima, a rock 6m high, lies 1.75 miles NE of Zizo Saki. Jiura Guri, a rocky depth of 0.9m, lies close NE of Okinogosen-jima.

Takao Yama (35˚33'N., 133˚14'E.), 332m high, is located 4 miles W of Zizo Saki. The summit is marked by a conspicuous, green-domed radar station.

Chikumi Wan (Kasa Ura), a small bay, located 4.5 miles W of Takao Yama, affords shelter to small vessels from all but the E winds. The small village of Chikumi lies at the head of the bay.

3.28 **Uomi Hana** (35˚36'N., 133˚06'E.), the N headland between Hinomi Saki and Jizo Saki, is a barren, reddish promontory fringed with reefs. Saza Guri, a steep-to, rocky depth of 9.2m, lies 0.75 mile N of Tako Hana, the N point of Uomi Hana. A light is shown from Tako Hana.

Table of Contents

Etomo Ko (35˚31'N., 132˚58'E.) is a fishing harbor located at the head of the bay on the mouth of the Sada Kawa. Small vessels can navigate the river which is connected to Sinzi Ko.

The harbor of Etomo Ko is enclosed by two breakwaters. The entrance between them is partially protected by a third detached breakwater. The harbor is used mainly by fishing boats.

Lights are shown at the head of the S breakwater, and at the SW end of the detached breakwater.

An overhead cable, with a vertical clearance of 8.2m, extends between the N breakwater head and the detached breakwater. Anchorage is available, in depths of 6 to 7m, S of the offshore breakwater. Depths in the anchorage inside the breakwater range from 3.1 to 4m.

Between Etomo Ko and Uppurui Wan, 12 miles W, the coast is rocky and should not be approached closer than 0.5 mile. A number of small villages lie on this stretch of the coast.

Uppurui Wan (35˚28'N., 132˚45'E.) lies on the S side of the promontory which terminates in Uppurui Hana. Uppurai Hana Light is shown from a round tower, 5.8m high. The bay is 2 miles wide at its mouth and runs E and W for 2 miles. The bay affords good shelter from all winds except from those in the W to N.

Anchorage.—Anchorage is obtainable by small vessels in Uppurui Wan on sand or rock, good holding ground, but is not recommended as the bay is completely open W and N, and due to the funneling effect of the hinterland, E winds raise a sea.

3.29 Hinomi Saki, a high, cliffy point fringed by foul ground, lies 5 miles WSW of Uppurui Hana. The point forms the NW extremity of a promontory of which Oishi Bana is the SW extremity. Hino Misaki Light is shown from a round stone tower, 44m high. An auxiliary light, shown from a round concrete tower 13.1m high, is situated close NE of the main light.

Caution.—Large fishing buoys made of bamboo or logs are set 10 to 50 miles off this coast from spring through autumn. From November through February, large fish nets are set N of Hinomi Saki; the N and W ends of the nets may be marked with lights.

Off-lying Islands

3.30 Oki Gunto (36˚10'N., 133˚10'E.), an island group con2sisting of Dogo, the NE island, and Dozen, three smaller islands with numerous rocks and islets to the SW, is located 25 miles N of Uomi Hana. Dogo and Dozen are separated by a channel almost 6 miles wide. The islands are comparatively high and rugged; the land used mostly for farming. Tidal currents in the area are weak and irregular.

Dozen consists of three main islands, so disposed that they nearly enclose a water area that can be approached by any one of the three channels leading between them. Ciburi Shima is the S island; Nisino Shima, the largest, is the NW island; and Nakano Shima is the NE island.

Nisino Shima consists of two sections joined by a narrow isthmus. Takuhi Yama, the highest peak in Dozen, 452m high, rises near the S end of the NE section which places it nearly in the center of the group.

Nakai Kuchi, the passage separating Nishino Shima and Nakano Shima, has a navigable width of 0.25 mile. A depth of 20.1m can be carried through the middle. Two small islets, 1 mile offshore, obstruct the N approach, and a rocky depth of 17m lies in mid-channel just inside the N entrance. Tidal currents in the passage set S with a rising tide at a maximum of 0.75 knot and N with falling tide at 1.5 knots.

Nakano Shima is indented by several coves which afford shelter to small vessels. Atodo Yama, the island's highest peak, is 246m high.

O Guchi (Kiro Kuchi), the channel between Nakano Shima and Chiburi Shima, has depths in excess of 36.5m for a width of over 1 mile, except for a rocky depth of 32.9m near mid-channel, close W of the entrance.

Chiburi Shima is the S island of the group. Chibu Wan, on the S shore, affords shelter for small vessels. Kurii Ko is a small harbor, protected by breakwaters, on the NE side of the island. Akahage Yama, 325m high, is the highest peak.

Meguri, a rock lying in the W approach to the cove W of Chiburi Wan, is illuminated at night by a light shown on Mikoshi Hana, the W entrance point to this cove. Another light stands close N of the one on Mikoshi Hana.

Akanadano Seto (Akanada Kuchi) separates the NW end of Chiburi Shima from the S point of Nishino Shima. An overhead cable, with vertical clearance of 40m, spans the fairway which has depths of 34.7m and a channel width of 0.25 mile.

Tidal currents of up to 1 knot set E with the rising tide and W with the falling tide. Because of the E ocean current, the rising tide is usually stronger and longer lasting. During rough weather, the current may set W all day.

Urago Wan, an inlet on the S side of Nishino Shima, affords anchorage, in 20.1m to 32.9m, mud and sand, good holding ground. A submarine cable is laid from the point of the small peninsula, located due W of Takuhi Yama, SSE to a point on the N shore of Chibura Shima. Urago village is situated at the head of the bay.

Directions.—Vessels proceeding to the Urago Wan anchorage by way of O Guchi should approach the passage with Kuroshima Bana in line bearing 283˚ with Tawara Shima. When abeam of Kiroga Saki, alter course to 307˚ to steer for the 258m hill near the head of the SW cove. When abeam of Okatsura Shima, distant 0.7 mile, alter course to 326˚ to steer for the 85m hill on Shimane Saki. Then proceed to the anchorage.

Dogo Suido, the channel separating Dozen and Dogo, is 6 miles wide; however, rocks and reefs reduce the fairway to about 2.5 miles between Omori Shima and Onbe Shima. It has a least depth of 31m in mid-channel.

Omori Shima is a steep, grassy islet with a sharp conspicuous peak, 155m high, near the NE end. A number of dangers lie within the area, 0.5 mile SE of the islet. Sakai Guri, a group of four low above-water rocks, lies on the outer end of a bank which extends about 4 miles S from Omori Shima.

Onbe Shima, a group of four rocks, the highest being 23m high, lie 2.5 miles NNE of Omori Shima. The rocks are the outermost danger fringing the SW coast of Dogo.

3.31 Dogo (36˚15'N., 133˚17'E.), the largest of the islands, is about 10 miles in diameter. The island is cliffy and fringed with numerous islets and rocks that extend up to 0.5 mile offshore. Daimanji Yama, 608m high, the highest peak, is a good landmark.

Return to paragraph: 3.27

Saigo Ko (36˚12'N., 133˚20'E.) (World Port Index No. 61770), the capital and principle town in Oki Gunto, lies on the SE coast of Dogo. Within the entrance, the harbor branches off to the N and W, forming two coves. The entrance to the harbor is narrow, but free of danger except for a rock, 1m high, on the E side of the entrance. Vessels of up to 1,000 grt, drawing 4m, berth alongside. Pilots are not available.

Anchorage.—Vessels generally anchor in the N cove. The W cove has a narrow shoaled entrance making it unsuitable as an anchorage. The N cove anchorage has depths of 18.2 to 32.9m, mud bottom. A small rocky area, 12.8m deep, lies near the center of the cove.

Taisha Ko to Hamada Ko

3.32 From Taisha Ko, the coast trends SW for 44 miles to Hamada Ko, a port of entry. The coast is rocky and generally steep-to with no dangers more than 1 mile offshore. A range of hills backs the entire length of coast in this vicinity and numerous small coves indent the shore.

Taisha Ko (35˚24'N., 132˚40'E.) is a small artificial fishing harbor located 2.5 miles SE of Hinomi Saki. Sheltered anchorage is available off the port, in 9.2m, sand. The anchorage is protected from N and E winds. The harbor is protected by three breakwaters.

Oura Hana, thickly wooded with pine trees, is prominent from the N and W. Several rocks fringe the NE side of the headland. The harbor of Oura is protected by breakwaters.

Nima Ko (35˚09'N., 132˚25'E.) is a small fishing harbor located about 2 miles SSW of Oura Hana. Maetaka Guri, a rocky depth of 8.7m, lies 0.75 mile NW of the harbor entrance.

Yunotsu Ko, a small harbor, opened to the NW, lies 4.5 miles SSW of Nima Ko. The town of Yunotsu is situated on the N side of the harbor. Oetaka Yama, a conspicuous peak 808m high, lies 4.5 miles ESE of the town.

Gotsu Ko (35˚01'N., 132˚14'E.) is a small harbor at the mouth of the Go Kawa. There is usually a heavy sea off the entrance to the port. When in freshlets, the river current is reported to reach a rate of 10 knots. Vessels of less than 100 grt frequent the harbor.

Aka Hana, about 8 miles SW of Gotsu Ko, is a red cliff fringed with a rocky shoal. There is a large sandhill about 2.5 miles NE of the cliff which is very prominent from the SW and W.

Hamada Ko (34˚53'N., 132˚04'E.)

World Port Index No. 61730

3.33 Hamada Ko, a port of entry, is divided into two sectors; commercial trade is handled in the S sector, while the the N sector is used as the fishing port. Both the N and S sectors are protected by breakwaters. A number of islands, scattered along the N edge of the harbor, also provide good shelter to the port.

Depths—Limitations.—Nagahama Ko, the commercial center of the port, is protected by reclaimed land and the W breakwater. The draft limitations in the channel are 9m at Nagahama Wharf No. 2 and 7m at Nagahama Wharf No. 1.

Vessels of up to 15,000 dwt may berth at Nagahama Wharf No. 1, in a depth of 10m. Larger vessels handle cargo offshore, according to their draft. Fukui Wharf No. 1 and Fukui Wharf No. 2 have lengths of 130m and 90m and depths alongside of 7.5 and 5.5m, respectively.

Isaki Se, a rocky shoal having a least depth of 12.2m, lies in the approach to the port, about 0.8 mile W of the breakwater.

Hamada Ko, the fishing center of the port, is protected by breakwaters. Depths in the harbor range up to 4m. Vessels of up to 300 grt can enter the fishing port.

Matsuhara Ura, in which the depths are less than 5.5m, is situated in the NE corner of the harbor. Hamada Kawa flows into the S side of the inlet.

Pilotage.—Pilots are available at the quarantine anchorage during daylight hours only.

Anchorage.—The best anchorage available is off the fishing harbor, in 12.8m, mud bottom. With strong W winds, vessels anchor, in 12.8m, off the commercial harbor, 0.25 mile SE of O Shima. A lighted buoy marks shoal water about 0.5 mile ENE of O Shima.

A rectangular quarantine anchorage, 430m by 795m, lying NE-SW, is centered 0.67 mile E of Shakkuri. Pilots board at the quarantine anchorage.

Small vessels anchor E of Setoga Shima or in Tono Ura, in 3.1 to 4.6m, mud bottom.

Hamada Ko to Koyama Misaki

3.34 From Hamada Ko the coast, generally steep-to, trends SW for about 24 miles to Koyama Misaki. Except for Esaki Ko, the shoreline is regular and with the exception of Taka Shima all inlets and known dangers lie within 1 mile of the coast. Several small fishing villages lie on this section of the coast.

Taima Yama (34˚49'N., 132˚01'E.), a prominent peak with an elevation of 609m, is located 4 miles SSW of Hamada Ko. Taima Yama is surmounted by five radio towers marked by obstruction lights.

Kannon Saki is a cliffy headland located about 5.5 miles SW of Taima San. The small port of Sutsu lies 1 mile E of the point.

Taka Shima (34˚50'N., 131˚50'E.), a high, steep-to island, lies almost 5 miles NW of Kannon Saki. It is 0.5 mile in length and 117m high. The island provides a good landmark for shipping along the coast. Taka Shima Light is shown from a concrete tower, 14.9m high, standing on the summit of the island. Maeno Se, an isolated depth of 15.8m, is located 1 mile E of the island.

Esaki Ko (34˚39'N., 131˚39'E.) is a narrow L-shaped inlet with a minimum navigable width of 0.1 mile and a depth of 5.5m. The port is used mainly by fishing vessels. At the entrance to the port, flood current sets onshore and the ebb current sets offshore.

Aspect.—The port is best identified by **Ko Yama** (34˚39'N., 131˚37'E.), a mountain 533m high, located 0.75 mile S of Koyama Misaki. A second peak, close E, is 478m high. From the W they appear as one rounded summit.

Shiritaka Yama, 0.25 mile SE of Ryujin Saki, is 174m high.

Saidoji, a hexagonal temple, is a prominent mark at the head of the harbor.

Directions.—From a position 1 mile off the harbor mouth, the approach is indicated by the alignment (202˚) of leading lights.The front light (34˚39'N., 131˚39'E.) is shown from a round concrete tower, 4.9m high, with an arrowhead day-

mark.The rear light is shown from a similar daymark, situated 120m SSW of the front light. These towers show up well and lead through the harbor entrance, with rocks on the W side and deep water close inshore on the E side.

About 1.5 miles within the entrance, two breakwaters afford protection to the anchorage and port.

Anchorage.—Anchorage, in depths of 4.9 to 7m, in Esaki Ko is only suitable for vessels up to 1,000 dwt. It is well-sheltered, but the mud bottom is reported to be very soft.

Koyama Misaki, a conspicuous and salient headland, is the termination of the N slope of Ko Yama. Shiro Se, a chain of rocks, some above-water, extends NW for 0.4 mile from the NW side of Koyama Misaki. A light is shown from the point. Nanatsu Shima is a group of rocky islets lying 1 mile to the NW of Koyama Misaki.

Susa Ko to Hagi Ko

3.35 Susa Ko (34˚38'N., 131˚36'E.) is entered between Kotohirage Hana and Kamega Kubi. The entrance is encumbered by a group of islets and rocks lying almost in mid-channel, and by foul ground extending N for 0.15 mile from Kotohirage Hana. Breakwaters protect the fishing harbor at the head of the inlet. A light is shown from Tenjin Shima.

The preferred channel to Susa Ko is between Tenjin Shima, the largest islet, and Kuro Shima. Depths shoal gradually from 31m in the entrance, with general depths of 9 to 18.2m in the central part of the harbor.

Tidal currents at the entrance to Susa Ko are weak,with the NE current reaching a maximum about 1 to 2 hours before local HW and the SW current reaching its maximum at about the same interval before local LW.

Anchorage is available, in 14m, mud, 0.1 mile S of Benten Shima, a small islet marked by a shrine, lying off the N shore of the harbor. Limited swinging room restricts the two N coves to vessels of less than 100 grt.

Uta Shima (34˚34'N., 131˚29'E.), a flat-topped, pine-covered islet, lies 2.5 miles offshore, 6 miles SW of Susa Ko. Futajima Guri, with a depth of 11.6m, lies 2 miles NW of Uta Shima. Hime Shima, 92m high, lies 2 miles ESE of Uta Shima. The channel between these two islets is deep and free of dangers.

Modoro Misaki (34˚32'N., 131˚28'E.), a high point faced with rounded cliffs, lies about 3 miles SSW of Uta Shima. The point rises to Todake Yame, thickly wooded and 416m high. It is prominent, especially when viewed from N. A light is shown on the SW side of the cape.

O Shima (34˚30'N., 131˚25'E.), 90m high, lies about 3 miles SW of Modoro Misaki. A village is situated on the S shore. A light is shown from the SE corner of the island.

A submarine cable lies about 0.8 mile SW of the light and proceeds in a NW direction to the island, about 20 miles distant.

Hagi Ko (34˚25'N., 131˚24'E.)

World Port Index No. 61720

3.36 Hagi Ko is a port of entry and a fishing center. Hagi, the principle city of Yamaguti, is an important industrial center. A group of six islands lies up to 5 miles offshore on the approach to the harbor. The islands are mostly flat-topped and marked by steep cliffs. The city of Hagi is situated in the delta area between the two branches of Abu Kawa. The port is entered between Ose Hana and the SW side of Koshigahama Hanto.

Winds—Weather.—During the winter months, the prevailing winds are from the W. From March through November, NE winds are the most frequent; SE winds are rare. Fog seldom occurs in this vicinity.

Tides—Currents.—Tidal currents are weak and the slight ocean current off the harbor sets NE. The current sets NE with a rising tide, attaining maximum strength at HW. With a falling tide, the current sets SW and is strongest at LW.

Depths—Limitations.—Depths in the harbor shoal gradually from 23.7m in the entrance. Kata Ko, the commercial port at the head of the N cove, has depths of 7m at the dock. According to reports, a vessel of 2,700 grt, drawing 6.7m, moored alongside.

Pilotage.—A pilot is available, but arrangements must be made well in advance. The pilot boards 1.1 miles SW of Kasa Yama, where quarantine is conducted.

Anchorage.—Anchorage is available, in 18.2m, mud and fine sand, S of Kasa Yama. The roadstead is open to the NW and vessels frequently drag anchor when winds from that quarter exceed 15 knots.

Caution.—Fish havens have been set in the harbor and its approaches.

Hagi Ko to Tsuno Shima and Mi Shima

3.37 From Hagi Ko, the coast trends W for 21 miles to Kawashiri Misaki, then SW for 9 miles to Tsuno Shima. The mountains in this vicinity rise abruptly from the coast, which is broken by numerous bays and inlets. Mi Shima is located 22 miles N of the mainland.

Ai Shima (34˚30'N., 131˚17'E.), 157m high, is located 7 miles NW of Hagi Ko. It is the largest and outermost island in the approach to Senzaki Wan. A light is shown from the NW side of the island.

O Shima (34˚25'N., 131˚16'E.), 115m high, located 5.5 miles S of Ai Shima, lies in the entrance to Senzaki Wan. Foul ground fringes the entire E side from N to S, extending out to 1 mile. A light is shown from the N tip of the island.

Kabe Iwa, 33m high, is located 1.5 miles NE of O Shima, the outlying danger on the E side of the main approach channel to Senzaki Wan. Shojin Guri, a rocky depth of 4.9m, lies 0.6 mile ENE of Kabe Iwa.

Senzaki Wan, about 4 miles long and 2 miles wide, is located 7 miles W of Hogi Ko. Numerous islets and dangers lie in the approach and entrance to the bay, but the bay and harbor are relatively unencumbered. Depths shoal from 36.5m in the entrance of the bay to 18.2m off the entrance to Senzaki Ko.

3.38 Senzaki Ko (34˚23'N., 131˚12'E.) (World Port Index No. 61710), a fishing harbor in the SW part of Senzaki Wan, is sheltered from all winds; breakwaters protect the harbor basin. Depths within the basin range from 2 to 6m. A shoal, less than 4.9m deep, extends for about 0.5 mile on the E side of the fishing port breakwater.

A pier at the cement factory, S of the fishing harbor, has a depth of 8.9m alongside. It has been reported that vessels up to 8,500 grt use the berth.

Anchorage.—Vessels anchor. in depths of 8 to 14.9m, mud and sand bottom. Vessels of 10,000 grt anchor here. Weather and tidal conditions are similar to those at Hagi Ko.

Senzaki Seto is a narrow channel, used by small vessels drawing up to 3.1m, that connects Senzaki Wan to Fukawa Wan. It is free of dangers, but the shoals in the W approach are dangerous in a heavy sea. An overhead cable, with a vertical clearance of 22.9m, and a bridge, with a vertical clearance of 12.9m, span the passage.

The E tidal current flows through Senzaki Seto from 4 hours before until 2 hours after high tide at Odomari, with a maximum velocity of 2 knots. The W current may run at a rate of 1 knot. At the turn the currents may be irregular for 1 or 2 hours, sometimes with a slack period of 15 minutes.

3.39 Omi Shima (34˚25'N., 131˚12'E.) consists of two parts connected by a narrow isthmus, 200m wide. The W side of the island forms the E shore of Fukawa Wan;the S side forms the N shore of Senzaki Wan. Taka Yama, a conspicuous, conical mountain, 320m high, rises near the NW end of the island. The N and E coasts of Omi Shima are fringed with foul ground to a distance of 0.2 mile.

Fukawa Wan, a bay, entered between Ima Misaki and Takenoko Bana, is located 3.5 miles W of Senzaki Wan. The bay affords sheltered anchorage from all winds except from the N, good holding ground with a sandy bottom. Depths recede gradually from 40m at the entrance to foul ground at the head of the bay. A light is shown from Ima Misaki.

Mi Shima (34˚46'N., 131˚09'E.) appears long and undulating from the NW. The island is 2.75 miles in length and 1.75 miles wide. The highest point is 182m and located near the middle of the W side of the island. There are no dangers other than rocks scattered along the coast. Local fishermen anchor off Utsu Ko, a small fishing village at the head of a bight on the E side of the island, in 7.3 to 20.1m, rock and gravel bottom. Lights are shown about the island.

The current in the vicinity of the island sets E with a velocity sometimes as high as 2.5 knots. It is particularly strong off the N side of the island.

Kawashiri Misaki (34˚26'N., 130˚59'E.), a cliffy and thickly-wooded projection, 60m high, is located 7.5 miles W of Ima Misaki. The ocean current flows close off the point and causes tide rips which are very heavy during the summer months. A light is shown from the point.

Yuya Wan is entered between Orikama Hana and the SW extremity of Yuya Hanto, about 2.25 miles to the NE. Depths range from 45.7m in the middle of the entrance approach to 9.2m less than 1 mile from the head of the bay. The N shore is relatively steep-to, but the E end of the S shore is fringed with shoal water and sunken rocks up to 0.5 mile offshore. The bay is considered a good harbor of refuge.

Oura Byochi is the most-sheltered cove in Yuya Wan and affords good anchorage, in 14.6 to 23.7m, mud and good holding ground. The cove gives good protection during the Northwest Monsoons.

Caution.—A large number of fishing boats operate within Yuya Wan and several fish havens lie in the approaches and entrance to Yuya Wan.

3.40 Tsuno Shima (34˚21'N., 130˚51'E.), about 2.3 miles long, is separated from the mainland by Amaga Seto, a shallow and dangerous passage, which has a least width of 0.75 mile. The buoyed channel through Amaga Seto has been dredged to 3.1m and is 50m wide. Vessels up to 200 grt use the channel. A bridge, with a vertical clearance of about 18m, is under construction across Amaga Seto close NE of Hato Shima.

Shoals and drying rocks fringe the E and W ends of the island and extend to the 20m curve, which lies up to 0.75 mile offshore.

Anchorage, sheltered from W winds, is available off Oyama, on the SE side of the island.

Shiomaki (34˚25'N., 130˚48'E.), located 5 miles NW of Tsuno Shima, is a detached reef, 11m deep; it is marked by tide rips which are heaviest in summer. Strong NW winds raise a sea over the reef.

Tidal currents in the vicinity of Shiomaki are greatly altered by the Tsushima Current. The flood current sets SSW for about 1 hour at the maximum rate of 0.75 knot; the ebb current sets NNE for 11 hours at a maximum rate of 2.25 knots.

Kottoi Light

Tsuno Shima to Murasaki Bana

3.41 From Tsuno Shima, the coast trends S for 20 miles to Murasaki Bana. The coast from Tsuno Shima to Kannon Zaki is rocky and steep. From Kannon Zaki to Murasaki Bana, the coast is mostly sandy beach backed by low hills. In general, the 20m curve lies less than 1 mile offshore. Numerous fish havens exist along this part of the coast.

Futago Shima (34˚20'N., 130˚53'E.) consists of two rocky islets surrounded by a reef and located 1.5 miles SE of Tsuno Shima. The N islet is the higher, reaching a height of 42m. The summits of the islets are thickly wooded. The passage between the islets and the mainland is mostly foul.

Kottoi Ko, a small harbor located about 1.3 miles SE of Futago Shima, lies in a small inlet. The SW side of the entrance is encumbered by reefs and foul ground. The inlet affords good anchorage, in 7m, mud, good holding ground. Small vessels take shelter here during bad weather. A light is shown from the N entrance point.

Kanda Misaki is a low, wooded point located about 2 miles SSW of Kottoi Ko. The point is fringed by sunken and drying rocks. Nezumi Shima, a small islet fringed with foul ground, lies 1 mile N of Kanda Misaki.

Osaki Bana (34˚13'N., 130˚55'E.), fringed with reefs, rises to Sabatsuri Yama, 190m high, and surmounted by a clump of pine trees. Ryugu Iwa, 18.9m high, lies 0.5 mile NW of the point.

Atsu Shima consists of two large islands in a group of islets and rocks, lying 1 mile offshore, located 2.5 miles SSE of Osaki Bana. The N island is Me Shima and the S island, the larger, is O Shima. Both the islands are thickly wooded. Kabe Shima, a rock 10.1m high, is the northernmost danger in the group. Maru Se, a rock awash, reduces the fairway to less than 0.2 mile.

3.42 Futaoi-jima (34˚06'N., 130˚47'E.) lies about 7 miles SW of Atsu Shima and 3 miles off the mainland. The shoreline of the island is steep and cliffy, especially on its W side. The NW part of the island consists of three peaks, the highest with an elevation of 250m. A light is shown from Kanega Saki, located on the SW side of the island. Mizu Shima, a rock 3.7m high, lies 1 mile SE of Futaoi-jima. A buoy marks the E side of the foul ground off the rock.

Murasaki Bana (34˚01'N., 130˚54'E.) is a low, flat, salient point covered with pine trees. The town of Yasuokamachi lies close E of the point. Kurumi Se, a gravel bank, lies near the NW end of the shoal area extending 1.5 miles NW from the point. A light is shown from Kurumi Se.

Table of Contents